



**NOAA Teacher at Sea**  
**James Miller**  
**Onboard NOAA Ship RAINIER**  
**August 13 - 27, 2005**

**Log 3**

**Day 5:** Wednesday, August 17, 2005

**Location:** Underway towards Mitrofinia Island

**Weather:** Clouds and rain, low 60's

**Wind:** 10-15 kts.

**Seas:** 6 – 8 foot

**Itinerary:** Should arrive in work area tonight (9:30pm). Anchor in Fish Range Bay on peninsula.

**Science and Technology Log**

Went up to the bridge last night prior to going to bed. There's usually an officer and three crew on a rotating four-hour shift schedule. It's reassuring that there is so much redundancy regarding navigational equipment. The officer on duty (OOD) is constantly checking our position on the chart and comparing it to the radar, and GPS chart plotter. He also does some quick time, distance, speed calculations to determine where we should be at half hour increments, these he marks on the chart (good lesson potential).

We also had a good conversation regarding compass headings. Typically, smaller boats navigate using magnetic compasses and therefore always steer toward magnetic north. The problem with magnetic north is that charts use true north (north pole) and depending where you are in the world there is a deviation between true and magnetic north (close to 20 degrees where we are). The ship is fitted with both magnetic and gyrocompasses. The gyro compass points towards true north but requires power. The ship uses the gyrocompass to navigate but would have to fall back on the magnetic compasses if the ship lost power (which is highly unlikely).

I met with LT Ben Evans and Commanding Officer Guy Noll after lunch for a briefing. They were interested in what specific classes I teach, and the things I wanted to get out of the cruise. They also briefed me about the RAINIER's mission and where we would be working. They showed me a chart in and around Mitrofanina Island. Charts will typically have depth soundings (in fathoms) every 1/4 inch or so. The map they showed me had a lot of white space with only a few limited depth soundings. The reason for this is because the area is literally uncharted. Very few ships or even fishing vessels come into the area because, in Alaska, the ocean bottom rises very quickly and they are concerned about running aground. This is where the RAINIER comes into play. Its mission is to collect the data to eventually be put on charts. It sounds like an easy task, however, the process is very complex and lengthy. I'll be learning more about the details of this process over the next week and two days.

Seeing the charts really gave me a good visual of where we are heading and the importance of the RAINIER's mission. I plan on putting together a bulletin board in my classroom detailing my experiences and the charts would be an excellent addition to it. I wrote down the chart numbers and asked Navigational Officer Pounds if they had any old ones on board they could part with. He's going to check for me, but if they don't, I'll just order them through NOAA.

Just before dinner I attended a briefing for the survey crew. These are some of the things I learned:

- 1) This leg is considered a clean-up leg since they worked the area for three weeks on the previous leg. Apparently there are five open sheets (sheets are designated areas that need surveying) that need to be completed.
- 2) There is an unstable weather pattern in the area and it will obviously determine whether or not we can finish in this area on this leg.
- 3) In addition to taking soundings, we will need to pick up a tide gauge and differential GPS station that they put on the island the last leg.
- 4) The tide gauge sends tide information via satellite to NOAA Headquarters. Again, very little is known about this area including tide variations.
- 5) As I understand it, the GPS stations that are set up on the Alaskan peninsula are too far away to be effective, therefore, the differential GPS was temporarily set up on Mitrofinia Island so that the RAINIER could navigate better while working in the area.
- 6) We will initially be anchoring north of Mitrofinia Island in a protected bay on the peninsula called Fish Range Bay. We will spend a day or two there and then move to Cushing Bay, which is on the north side of Mitrofinia Island.
- 7) They once again reiterated the fact that they are a bit short-handed this leg and will be relying on me to be part of the launch crews. I should expect very long days for about 5-6 days.

## **Personal Log**

I slept very well last night. I was in such a deep sleep that I almost missed breakfast. I guess it was the rocking of the ship. The seas are about 6-7 foot and the boat seems to handle it well. We're going with the wind so it's more of a soft but rolling ride. It's kind of a funny sight seeing everyone on board bouncing off the walls as they walk down a hallway. My cabin is on the port side on the bottom of the ship, so you can hear the water rushing by the hull, a bit eerie. Although, I guess it's much better than a cabin next to the engine room. I'm feeling fine; in fact, I had a big greasy breakfast and a hot dog for lunch. You can be assured I would not eat that kind of food if the seas were getting to me. I feel bad for another visitor onboard whom I'm friendly with. Unfortunately, he hasn't found his sea legs yet, but I'm sure he'll feel better when we get the Fish Range Bay tonight.

The other bad side to this weather is the visibility is terrible. On our right (starboard) has been the Alaskan Peninsula, and we passed Kodiak Island to our left (port) but could barely make them out. I hope the weather clears at some point so I can get some good pictures. I promised my wife!!!

I have to get a good night's rest tonight because I'm scheduled to be out on a launch for close to 9 hours tomorrow. After dinner I'll be working with the survey crew to analyze the data. So it's going to be a long day, but I'm looking forward to it.